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Question-I am concerned over the direction of science and its orientation towards societal benefits. What about the science, such as some being conducted here at Scripps that is basic and examines fundamental problems? Astronomers don't have to worry about societal benefit.

Response-Much of what astronomers do does not have a direct societal benefit, however, they do not have a huge community that needs them. They are free to develop their own questions. Some would say that we are better off because we have the pull of the communities.

- -The reality is that the federal government needs to fulfill its missions.
- -However, we don't want to get into the prioritization of basic research other than to emphasize that it's a high priority in of itself.

Comment-I like the framework that's been proposed, where different scientific endeavors can fit in, including those that have in the past been overlooked or underemphasized.

Question-How do you get small cross-cutting initiatives going? For example, something that might work with CISE, marine biology, and NIH-how does that work or will work? **Response**-These elements are both inter- and intra-agency.

- -For example, at NSF, there are program managers working together behind the scenes who can fund interdisciplinary science. However, one of the challenges for program managers is that they need to build or maintain communities. If everyone is interdisciplinary, there isn't anything to build upon. The program managers are stewards of their community; if they have low success or award rate, there is less motivation to fund interdisciplinary activities.
- -In the current environment, where there is so little money for basic programs, folks don't have the freedom to invest in other things. That's why NSF mandates interdisciplinary areas, otherwise, there wouldn't be a place for them.
- -Outside of the agencies, it's particularly hard. The key is having a relationship with the program managers and giving them a reason to form interagency collaborations.
- -In DC, interagency collaborations have a bad reputation. NSF is one of the only agencies that dedicate funds 2 years out. Other agencies have missions and are influenced by Congress.
- -Everyone knows that interdisciplinary work is where science is headed and we're working towards improving the mechanisms.

Comment-We're seeing the seeds of change in how science is done, for example, NOPP, and have such things at Scripps. NSF has lines in proposals for interdisciplinary activities. We want to have interdisciplinary research, but institutions are lagging behind. **Response**-Centers exist out there-emphasis areas. At NSF, individual investigator grants often work in collaboration with such centers as an effective way of leveraging resources.

- -In GEO, if you take ships and facilities off the table, ½ of the funding goes towards individual investigators.
- -These centers can be effective mechanisms.

Question-What's your sense of the timeframe for the ORPP? Are there any groups missing from this effort? I don't see Navy there.

Response-The timeframe for this effort is 5-10 years; the near-term priorities are 2-4 years. In DC, the lifetime of a document is about 5 years due to changes in administrations and changes in the science.

-With respect to the question on groups, the only groups that were listed on the organization slide were the chairs of the committees. We certainly have membership and engagement from other agencies.

Comment-I like the focus on ecosystems, but they have time dimensions that are inconvenient-they change. That doesn't lend itself to individual investigations to understand an ecosystem. We need to look at the proper timescales to understand a system.

Response-We have a strong recognition of the need to examine systems on the proper timescales.

-We don't even know how to start implementing ecosystem-based management. We only have ideas as to what's important.